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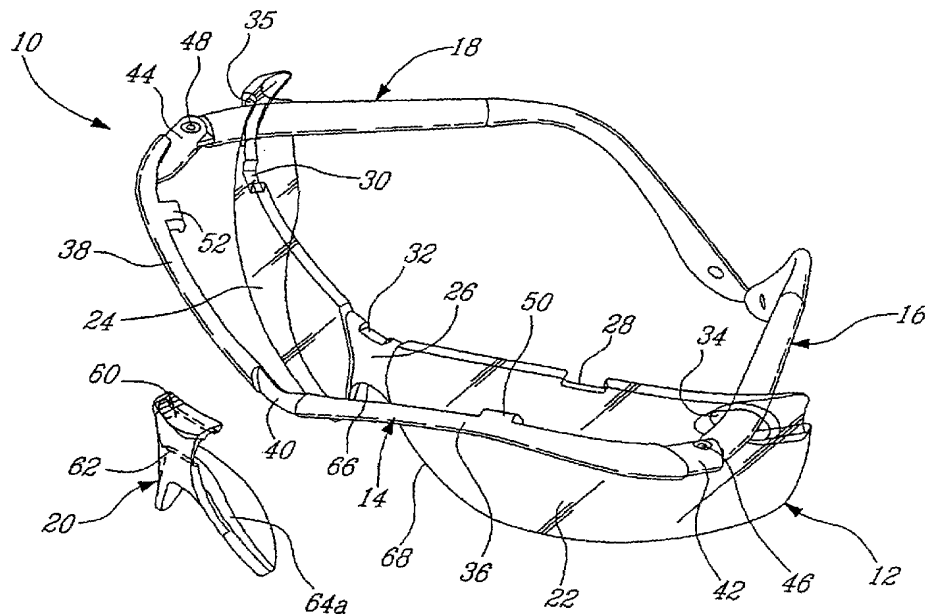
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*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: EYEWEAR



(57) **Abstract:** The eyewear described comprises a unitary lens consisting of a pair of transparent sight regions and of a bridging region therebetween and a lens engaging brow frame engaging the upper edge of the lens and having its opposite ends extending through openings provided at the opposite upper ends of the sight regions. Parts of the frame and of lens cooperate to mount the brow frame to the lens. A nose piece engages the frame and the lens to secure the assembly together.



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EYEWEAR

FIELD

The present invention relates to an eyewear, more particularly to a protective eyewear for industrial use.

5 BACKGROUND

An often occurrence in industrial use is that the lens and/or ear stems of a protective eyewear break, thus requiring a user to discard the entire eyewear and replace it with a new one. Another problem in the industry relates to the prevalence of standard protective eyewear that cannot accommodate comfortably different head sizes.

10 There is therefore a need for a protective eyewear for industrial use that can be easily mounted and/or dismounted in the event that one of its components is damaged and, at the same time, one which will provide the user with comfort.

One such eyewear has been described in U.S. Patent No. 5,987,653 issued November 23, 1999 to the present assignee, which describes an eyewear for industrial
15 use that comprises a deformable arcuate lens with a pair of temple entries at opposite ends thereof and a deformable brow frame shaped to fit the upper edge of the lens so as to be engageable therewith. The assembly of the temple pieces and the brow frame to the lens is effected by inserting the temple pieces through the entries of the lens and by effecting a snap engagement of the mid section of the brow frame to the upper edge of
20 the lens. There is room for improvement.

SUMMARY

The above-described and other problems and disadvantages of the prior art are overcome and alleviated by the present eyewear, wherein the components can be readily dismounted. This is achieved, in one exemplary embodiment, by using the nose
5 piece to secure the assembly of the brow frame to the lens.

According to the above exemplary embodiment, the present disclosure relates to an eyewear which comprises:

a unitary arcuate lens consisting of a pair of transparent sight regions and a bridging region between the sight regions; the lens displaying an upper edge
10 extending along the sight and bridging regions, a lower edge extending along the sight and bridging regions and a pair of openings respectively provided at a distal upper end of the sight regions;

a brow frame engaging the upper edge of the lens and opposite ends extending through the openings; means on the brow frame and on the upper edge of the
15 lens cooperating to mount the frame to the upper edge of the lens;

a detachable nose piece having first means to engage the frame and the nose portion and second means to engage the lower edge of the bridging region and parts of the sight portions to secure assembly of the brow frame to the lens; and

a pair of ear stems mounted at respective opposite ends of the brow
20 frame and rearwardly of the openings so as to be able to pivot between an inwardly folded position to an outwardly ear contacting position.

In one exemplary embodiment, the upper edge of the lens includes recesses in the sight regions and the brow frame comprises hook means engaging these recesses.

In another exemplary embodiment, the nose piece has a groove which is
25 adapted to receive therein the lower edge of the bridging region and some parts of the sight regions.

Other objects and further scope of applicability of the present invention will become apparent from the detailed description given hereinafter. It should be understood, however, that this detailed description, while indicating preferred
30 embodiments of this invention, is given by way of illustration only since various changes and modifications within the spirit and scope of the invention will become apparent to those skilled in the art.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is an exploded perspective view of an eyewear made in accordance with the present invention;

Figure 2 is a top perspective view of the eyewear components assembled;

5 Figure 3 is a rear perspective view of the eyewear;

Figure 4 is a top view of the eyewear;

Figure 5 is a cross-sectional view taken along lines 5-5 of Figure 4; and

Figure 6 is a cross-sectional view taken along lines 6-6 of Figure 4.

DESCRIPTION OF EXEMPLARY EMBODIMENTS

10 Referring to Figure 1, there is shown an eyewear, generally denoted 10, comprising five components, namely, an arcuate lens 12, a brow frame 14, a pair of ear stems 16 and 18, and a nose piece 20.

Referring also to Figure 2, which shows the components in assembled form, the arcuate lens 12 includes a pair of transparent sight regions 22 and 24 which are of
15 transparent material and a central bridging region 26 which may or may not be transparent.

The upper edge of each sight region 22, 24 displays a rectangular-shaped recess 28, 30 which the bridging region 26 displays a recessed area 32.

The upper distal end of each sight region 22, 24 displays an oblong opening 34,
20 35.

The brow frame 14 comprises two sections 36 and 38 which are adapted to lie along the upper edge of the lens. The brow frame includes a recessed area 40 which is in registry with the bridging region 26 of the lens. The opposite ends 42 and 44 have a dimension such that they may extend through the respective openings 34, 35 whereby
25 the pivot pins 46 and 48 connecting the ear stems to the brow frame will be located rearwardly of the lens when the brow frame is mounted to the lens.

The brow frame 14 further includes a pair of rearwardly extending hooks 50 and 52 which have a width slightly less than the width of their corresponding recesses 28 and 30 of the lens (see Figure 6).

30 The ear stems 16 and 18 are pivotly connected at 46 and 48 to the respective ends of 42 and 44 of the brow frame to move between an inwardly folded position and a rearwardly extending ear contacting position.

5 The nose piece 20 has at its upper edge, a hook extension 60 having a width adapted to be positioned over area 32 of the bridging region 26. The central region 62 of the nose piece has a flat rear surface which is adapted to contact the flat surface area 40 of the brow frame 14. The nose piece also includes a narrow vertical curved rear wall 64 which, together with the rear face of the central region 62 defines a recess in which the lower edge 66 of the bridging region 26 may sit. This rear wall 64 downwardly extends along opposite sides (one of which is shown as 64a) so as to further serve as a backing against which may bear part of the lower edge 68 of the sight region 22 as well as part of the lower edge of the sight region 24.

10 Although the invention has been described above with respect to one specific form, it will be evident to the person skilled in the art that it may be refined and modified in various ways. It is therefore wished to have it understood that the present invention should not be limited in interpretation except by the terms of the following claims.

CLAIMS

1. Eyewear comprising:
 - a unitary lens comprising a pair of transparent sight regions and a bridging region between said sight regions; said lens displaying an upper edge extending along said sight and bridging regions, a lower edge extending along said sight and bridging regions and a pair of openings respectively provided at a distal upper end of said sight regions;
 - a brow frame engaging said upper edge of said lens and opposite ends extending through said openings;
 - a detachable nose piece engaging said frame and said nose portion and engaging said lower edge of said bridging region and parts of said sight portions to secure assembly of said brow frame to said lens; and
 - a pair of ear stems mounted at respective opposite ends of said brow frame and rearwardly of said openings.
2. Eyewear as defined in claim 1, wherein said upper edge of said lens includes recesses in said sight regions and wherein said brow frame comprises hook means engaging in said recesses.
3. Eyewear as defined in claim 1 or 2, wherein said upper edge of said lens comprises a recessed area over said bridge region and wherein said nose piece comprises a hook portion engaging said recessed area.
4. Eyewear as defined in claim 3, wherein said nose piece displays a groove adapted to receive the lower edge of said bridging region and said parts of said sight regions therein.

5. Eyewear comprising:
- a unitary lens comprising a pair of transparent sight regions and a bridging region between said sight regions; said lens displaying an upper edge extending along said sight and bridging regions, a lower edge extending along said
 - 5 sight and bridging regions and a pair of openings respectively provided at a distal upper end of said sight regions;
 - a brow frame engaging said upper edge of said lens and opposite ends extending through said openings;
 - a detachable nose piece engaging said frame, said nose portion,
 - 10 said lower edge of said bridging region and parts of said sight portions; and
 - a pair of ear stems mounted at respective opposite ends of said brow frame.
6. Eyewear as defined in claim 5, wherein the unitary lens is an arcuate lens.

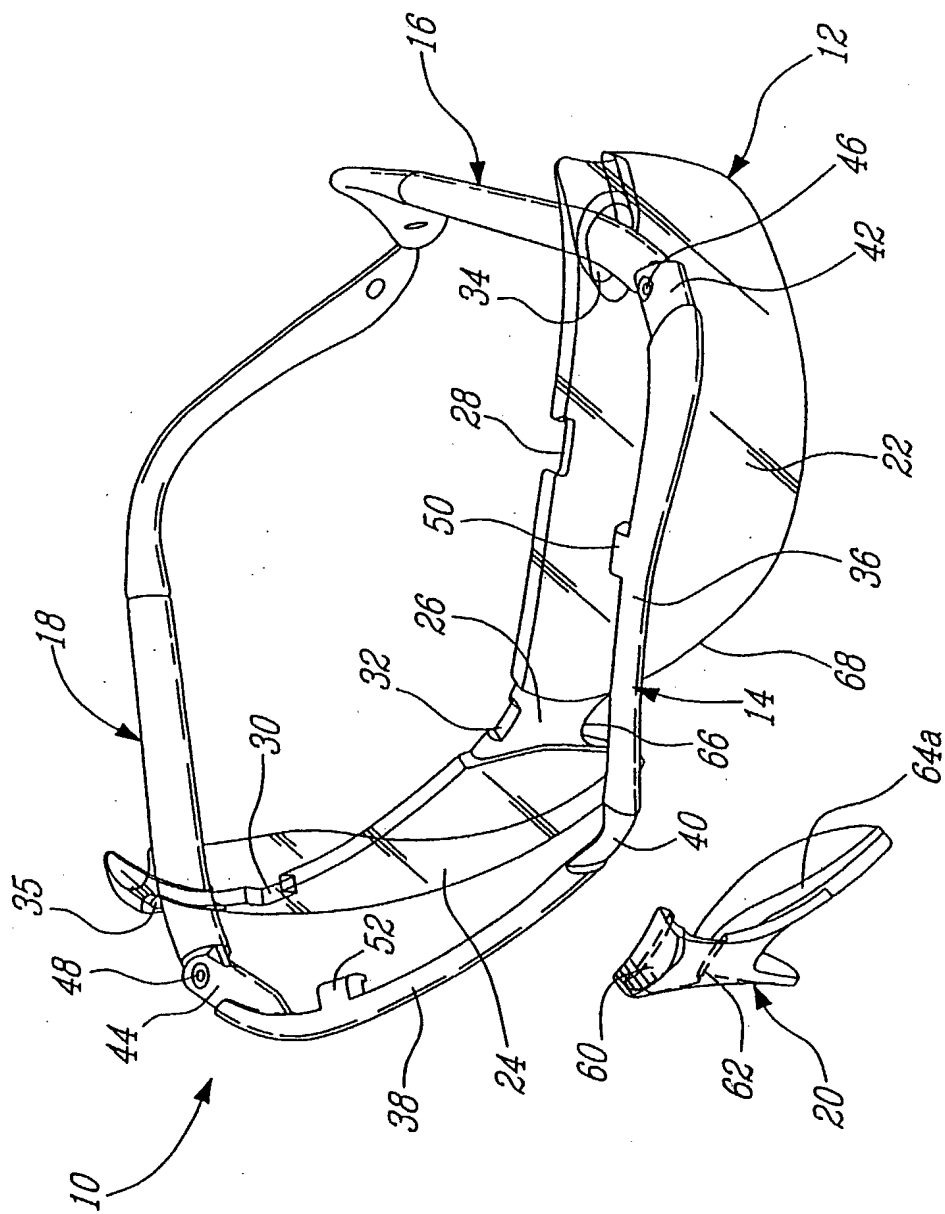


FIG. 1

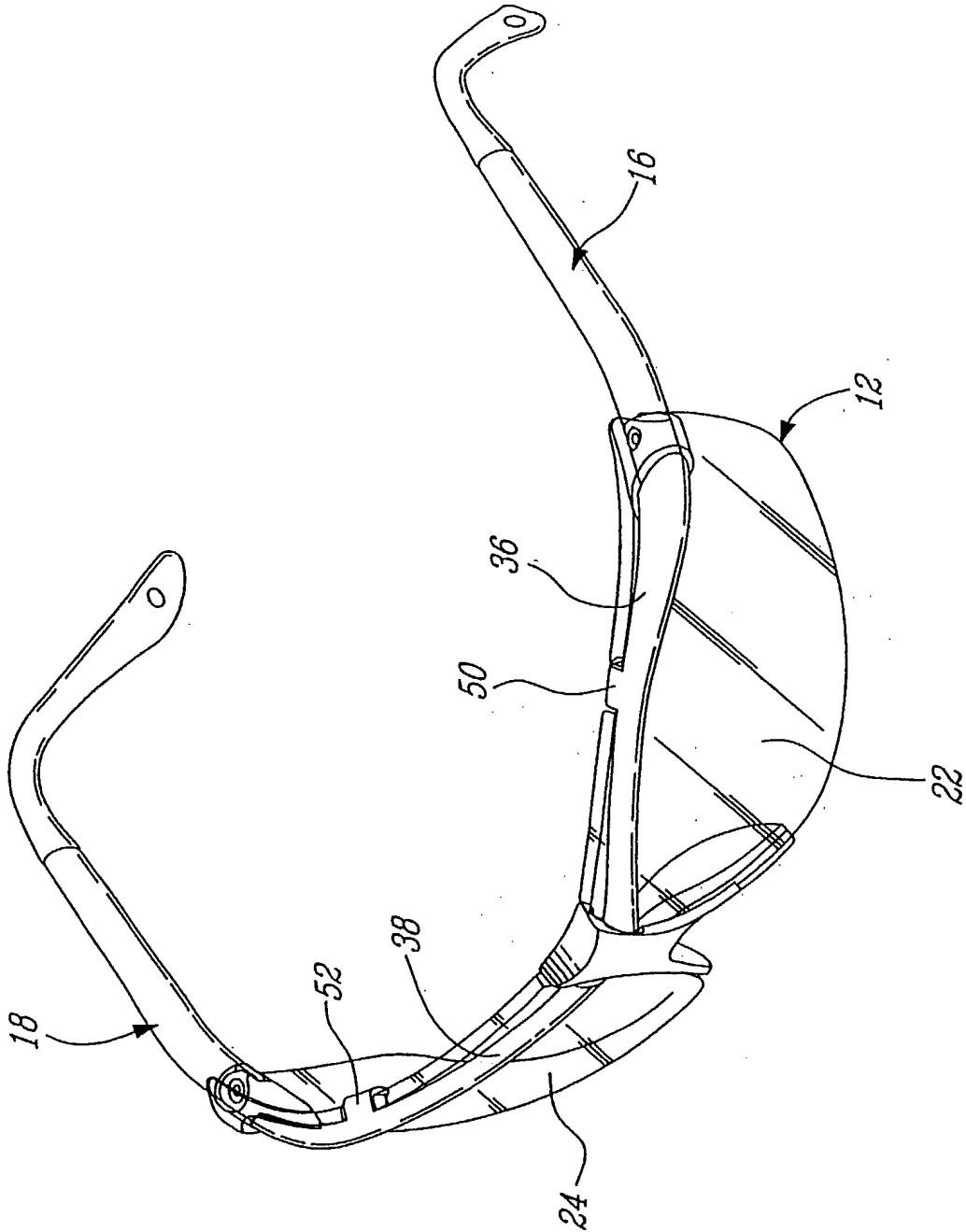


FIG. 2

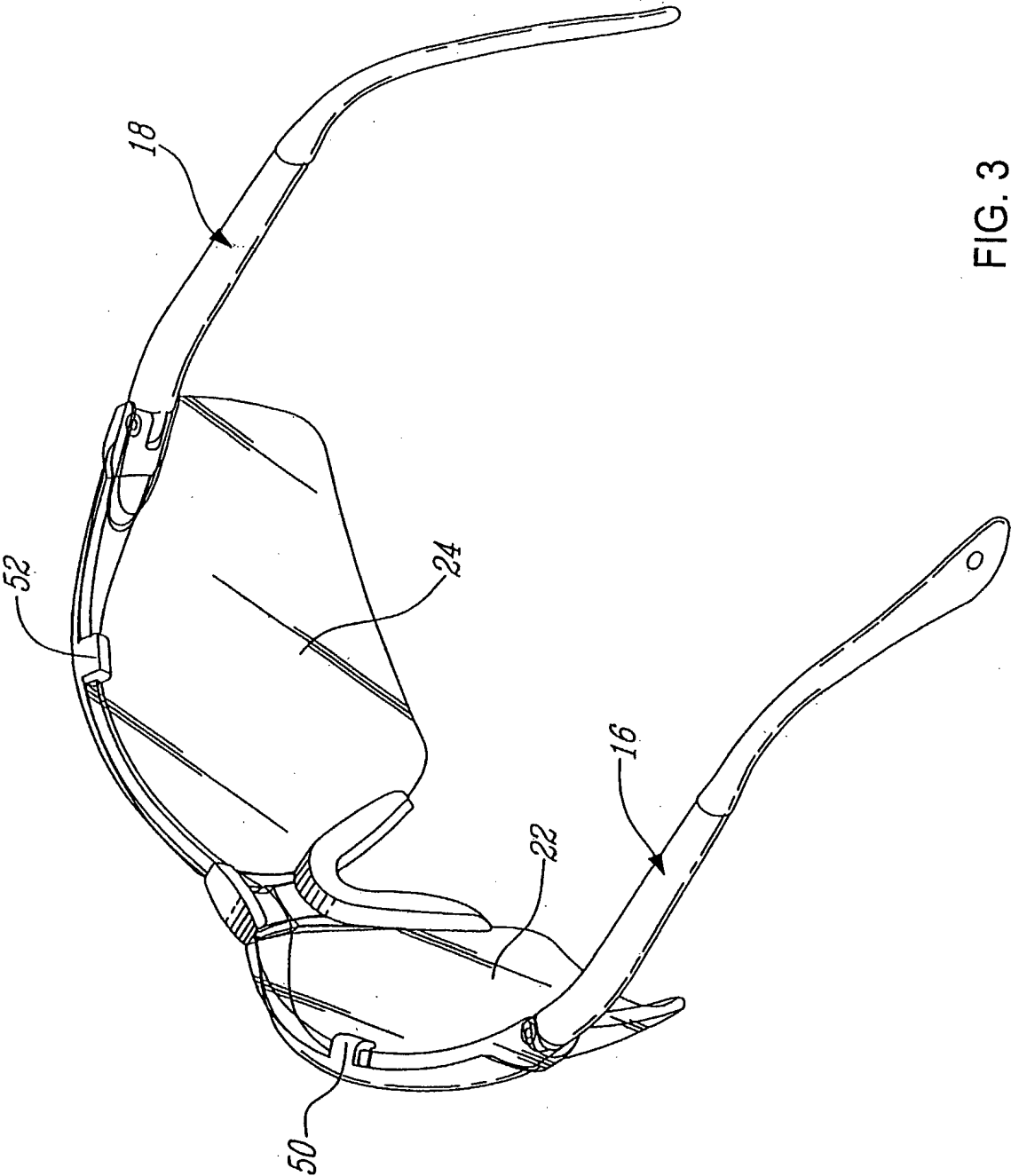


FIG. 3

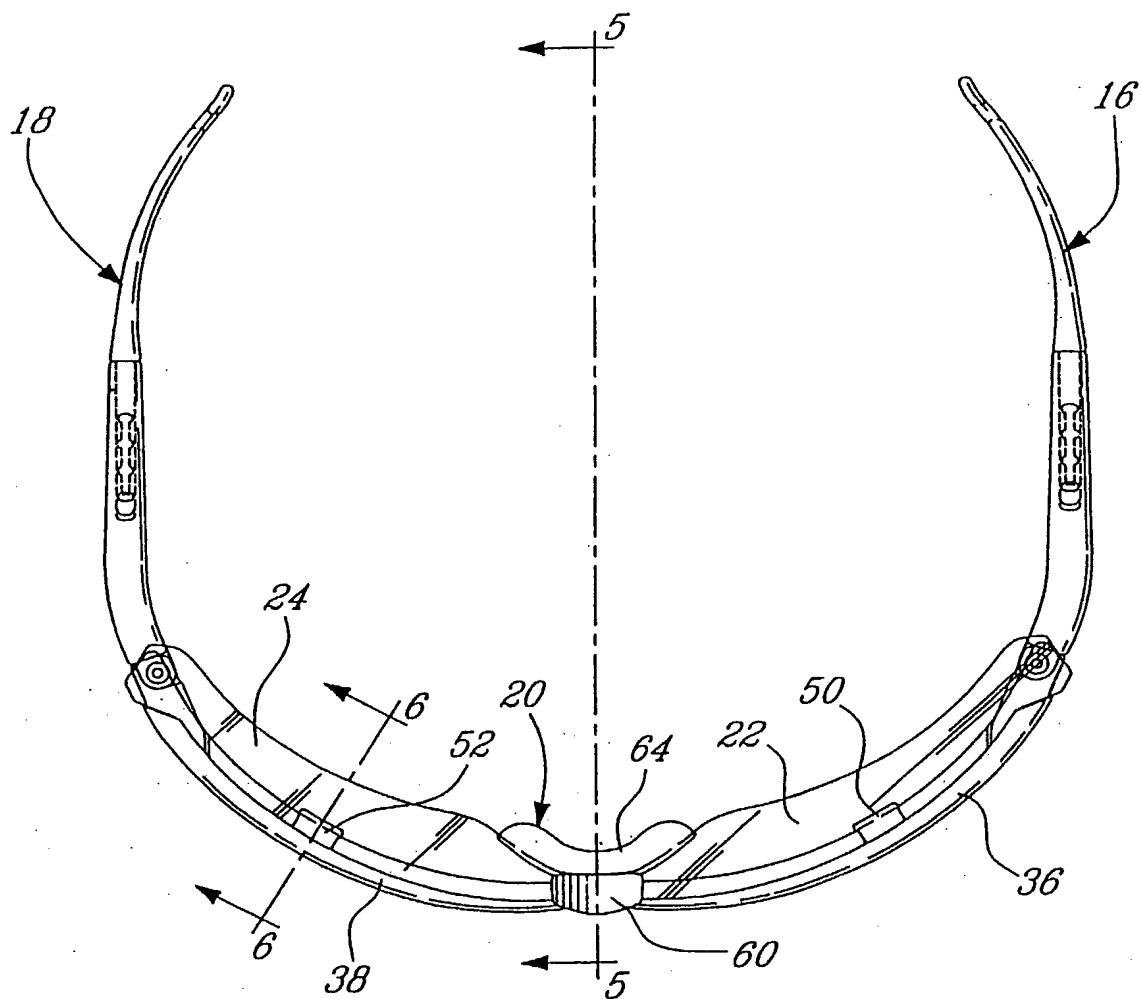


FIG. 4

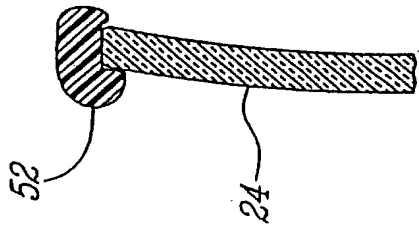
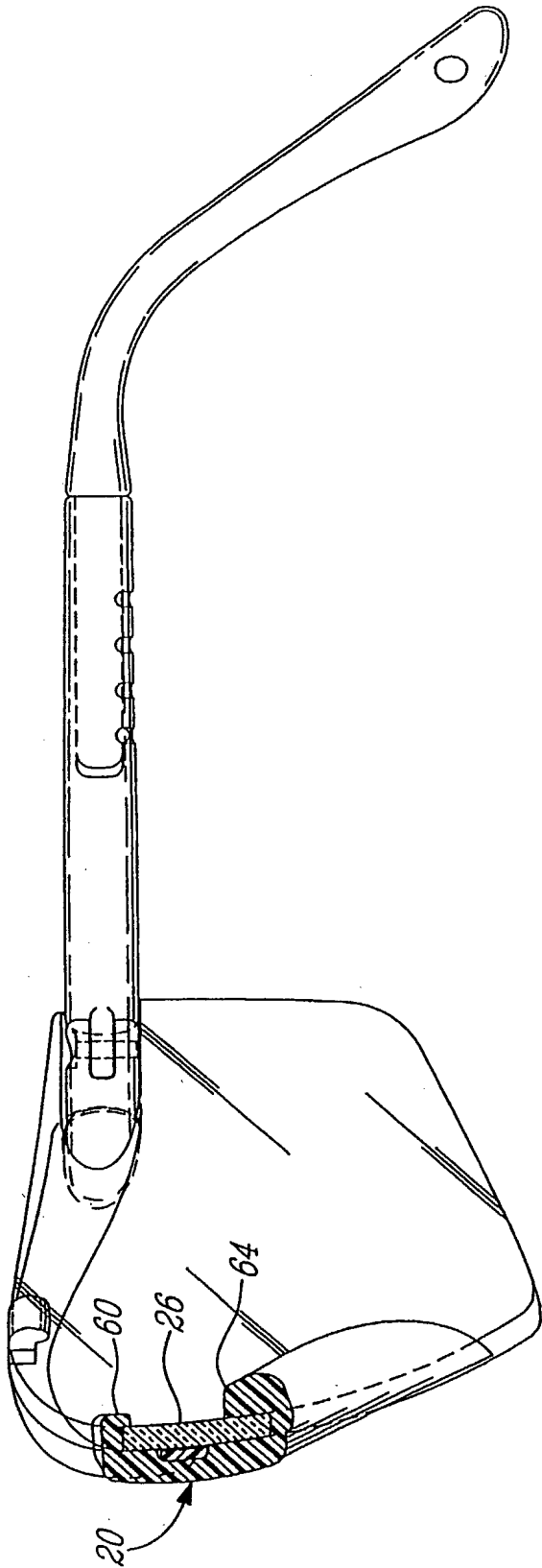


FIG. 5

FIG. 6

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 02/05683

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G02C5/00 G02C1/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G02C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 102 566 A (SHELTON ROBERT N) 25 July 1978 (1978-07-25) column 2, line 5 - line 53 ---	1,4,5
A	US 6 132 041 A (LIN JEY-CHING) 17 October 2000 (2000-10-17) column 1, line 12 - line 51 column 2, line 38 -column 3, line 7 ---	1-3,5
A	US 5 428 410 A (LEI TONY) 27 June 1995 (1995-06-27) column 1, line 50 -column 2, line 30 ---	1,5,6
A	US 5 987 653 A (CYR RAYMOND) 23 November 1999 (1999-11-23) cited in the application abstract; claims -----	1,5

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4102566	A	25-07-1978	NONE	
US 6132041	A	17-10-2000	NONE	
US 5428410	A	27-06-1995	NONE	
US 5987653	A	23-11-1999	NONE	